

## Data sheet for SIMOTICS S-1FT7

Article No. : 1FT7046-5AF70-1CB0



Figure similar

Client order no. :  
Order no. :  
Offer no. :  
Remarks :

Item no. :  
Consignment no. :  
Project :

### Engineering data

|                         |                        |
|-------------------------|------------------------|
| Rated speed             | 3,000 rpm              |
| Number of poles         | 6                      |
| Rated torque (100 K)    | 5.6 Nm                 |
| Rated current           | 3.50 A                 |
| Static torque (60 K)    | 6.0 Nm                 |
| Static torque (100 K)   | 7.0 Nm                 |
| Stall current (60 K)    | 3.40 A                 |
| Stall current (100 K)   | 4.00 A                 |
| Rotor moment of inertia | 8.39 kgcm <sup>2</sup> |
| Efficiency              | 92.0 %                 |

### Physical constants

|                             |                                |
|-----------------------------|--------------------------------|
| Torque constant             | 1.75 Nm/A                      |
| Voltage constant at 20° C   | 111.0 V/1000*min <sup>-1</sup> |
| Winding resistance at 20° C | 1.55 Ω                         |
| Rotary field inductance     | 11.0 mH                        |
| Electrical time constant    | 7.00 ms                        |
| Mechanical time constant    | 1.10 ms                        |
| Thermal time constant       | 35 min                         |
| Shaft torsional stiffness   | 8,300 Nm/rad                   |
| Net weight of the motor     | 10.2 kg                        |

### Mechanical data

|                          |  |
|--------------------------|--|
| Motor type               | Permanent-magnet synchronous motor   |
| Motor type               | Compact  |
| Shaft height             | 48   |
| Cooling                  | Natural cooling  |
| Radial runout tolerance  | 0.040 mm   |
| Concentricity tolerance  | 0.080 mm   |
| Axial runout tolerance   | 0.080 mm   |
| Vibration severity grade | Grade A  |
| Degree of protection     | IP64   |
| Design acc. to Code I    | IM B5 (new flange design)  |
| Temperature monitoring   | Pt1000 temperature sensor  |
| Color of the housing     | Standard (pearl dark gray similar to RAL 9023)   |
| Shaft end type           | Fitted key and keyway  |
| Sensor design            | Encoder AM24DQI: Absolute encoder 24 bit (resolution 16777216, encoder-internal 2048 S/R) + 12 bit Multiturn (traversing range 4096 revolutions) - with signal connection RJ45 |
| Electrical connection    | Connector turnable   |
| Connector size           | 1  |

### Optimum operating point

|               |           |
|---------------|-----------|
| Optimum speed | 3,000 rpm |
| Optimum power | 1.8 kW    |

### Limiting data

|                                   |           |
|-----------------------------------|-----------|
| Max. permissible speed (mech.)    | 9,000 rpm |
| Max. permissible speed (inverter) | 5,200 rpm |
| Maximum torque                    | 31.0 Nm   |
| Maximum current                   | 19.00 A   |

### Recommended Motor Module

|                          |         |
|--------------------------|---------|
| Rated inverter current   | 5.00 A  |
| Maximum inverter current | 15.00 A |
| Maximum torque           | 24.5 Nm |

### Holding brake

|                        |                        |
|------------------------|------------------------|
| Holding brake version  | Permanent-magnet brake |
| Holding torque         | 8.0 Nm                 |
| Braking torque         | 5.0 Nm                 |
| Power supply voltage   | DC 24 V                |
| Coil current           | 0.60 A                 |
| Permissible brake work | 270 J                  |
| Opening time           | 90 ms                  |
| Closing time           | 30 ms                  |